versal Disk Format (UDF) developed by the Optical Storage Technology Association, which is an implementation of the ISO/IEC 13346 and ECMA-167 file system. Wikipedia.org also provides an illustration of the directory and file structure of a DVD volume, which is reproduced as FIG. **3**. The main directory, shown as "DVD-Video" **42** includes two subdirectories "AUDIO_TS" **44** and "VIDEO_TS" **46**. According to Wikipedia.org, the "AUDIO_TS" directory **44** or Audio Title Set directory is typically empty or not present on DVD-Video discs. The "VIDEO_TS" directory **46** or Video Title Set directory is required to be present on DVD-Video discs and the "VIDEO_TS" directory contains the interactive multimedia content as a set of Video Manager (VMG) files **48** and Video Title Set (VTS) files **50**, **52**, **54**.

[0084] According to Wikipedia.org, the Video Manager files **48** include a VIDEO_TS.IFO file **56**, which stores control and playback information for the entire DVD. Such playback information can include the first play program chain, locations of all of the Video Title Sets (discussed below) on the DVD, a table of titles, number of volumes, domains for multiple languages and regional and parental control settings, information about subtitles and audio streams. The Video Manager files **48** may also include a VIDEO_TS.BUP file **58**, which is a backup copy of the VIDEO_TS.IFO file **56**. The Video Manager files **48** may also include the VIDEO_TS.VOB file **60**, which is the first-play Video Object of the DVD-Video disc (i.e. the first video played when the playback of the interactive multimedia commences—often a copyright notice, trailers, and/or a menu).

[0085] As noted above, the "VIDEO_TS" directory **46** also includes a set of files for each Video Title Set **50**, **52**, **54**. According to Wikipedia.org, the Video Title Set (VTS) files include a "VTS_zz_0.IFO" file **62** that stores control and playback information for the Video Title Set to which it relates, where "zz" indicates a Video Title Set number from 01 to 99. The control and playback information contained within the IFO file can include information about chapters, subtitles and audio streams. The IFO file does not store any audio/video/subtitle data. SourceForge.net provides details of the specific tables within a Video Title Set IFO file. Included in these tables is a list of Program Chains, which Wikipedia.org describes as a sequence of pointers that allows for seamless branching in DVD playback and that enable navigation during playback of the Video Title Set using "Next" and "Previous". The Video Title Set files also include a "VTS_zz_0.BUP" file **64**, which is a backup copy of the "VTS_zz_0.IFO" file **62**. The video, audio, subtitle and navigation streams of the interactive multimedia content are packed in accordance with the Video Object (VOB) container format. According to Wikipedia.org, VOB files are a strict subset of the MPEG program stream standard. Non-standard data (e.g. AC-3 audio, DTS audio, and subtitles) are inserted as private streams. Subtitles or subpicture streams store subtitles as bitmap images restricted to four colors including the transparent "color". The video streams can also include closed captioning material. Each Video Title Set includes one or more VTS_zz_x.VOB files **66** that contain the interactive multimedia content of the Video Title Set, where "zz" indicates a Video Title Set number from 01 to 99 and "x" indicates the sequence of VOB files from 0 to 9. The "VTS_zz_0.VOB" is optional and contains a menu for the Video Title Set when present. The remaining VOB files contain the video and any accompanying audio and subtitle streams for the Video Title Set.

[0086] The disclosure of http://www.wikipedia.org/wiki/DVD-Video, http://dvd.sourceforge.net/dvdinfo/ifo_vmg.html, and http://www.sourceforge.net/dvdinfo/ifo_vts.html is hereby incorporated by reference in its entirety.

[0087] A significant selling point of the DVD-Video specification is its support of a wide variety of extra, or bonus, features in addition to a feature film. These extra features can include audio commentary, documentary features, commonly about the making of the main title, deleted scenes, photo galleries, storyboards, isolated music scores, trivia text, commentary, interactive games, film shorts, TV spots, radio spots, theatrical trailers, and teaser trailers advertising related movies or DVDs. In addition, DVDs support interactive motion menus, still pictures, up to 32 selectable subtitles, seamless branching for multiple storylines, up to 9 camera angels, and DVD-ROM data files that can be accessed on a computer. The conversion of all of the interactive multimedia content on a DVD-Video into a format suitable for electronic distribution in accordance with embodiments of the invention is discussed further below.

Converting DVD Content to HTML5

[0088] Many network-connected devices include support for rendering HTML5 pages in the form of a natively implemented web browser application. In many embodiments of the invention, interactive multimedia content authored in accordance with the DVD-Video specification is used to generate HTML5 pages that can be electronically distributed to network connected playback devices. A process for converting interactive multimedia content authored in accordance with the DVD-Video specification into HTML5 pages in accordance with an embodiment of the invention is illustrated in FIG. **4**. The process **20'** involves parsing the IFO files in the Video Manager and Video Title Sets of the files within the DVD-Video content to build (**22'**) an object model representing the DVD. The object model can then be used to generate (**24'**) HTML5 pages that capture the interactive aspects of the interactive multimedia content (e.g. the menus and the chapters) in the DOM of the HTML5 pages and associated JavaScript. The process **20'** can then involve transcoding (**26'**) the audio and video in the VOBs of the DVD. In many embodiments, MPEG-2 video in the video title sets is transcoded into H.264 video. In several embodiments, multiple H.264 elementary bitstreams are produced for playback on devices with different playback capabilities. In several embodiments, the audio in the Video Title Sets is transcoded into AAC audio. As can readily be appreciated, the specific formats to which the audio and/or video streams are transcoded and/or transrated are largely dependent upon the requirements of a specific application. Subtitles formatted in accordance with the DVD-Video specification are typically stored as bitmaps within the Video Title Set VOBs. In several embodiments, optical character recognition is applied to one or more of the bitmap subtitle streams to convert (**28'**) the subtitle bitmaps to text. In many embodiments, the audio/video/subtitle information is packed (**30'**) into one or more container files and the HTML5 page(s) and container file(s) containing associated image, and video elements are uploaded to a server for access by playback devices. In a number of embodiments, the HTML5 pages, associated images, and the audio/video/subtitle content for each Video Title Set of the originally authored interactive multimedia content are packed into a container file for electronic distribution. In several embodiments, the DivX Plus container file format specified by DivX, LLC of San